

BEDROCK GEOLOGY OF SOUTHWEST IOWA

DIGITAL GEOLOGIC MAP OF IOWA PHASE 5: SOUTHWEST IOWA

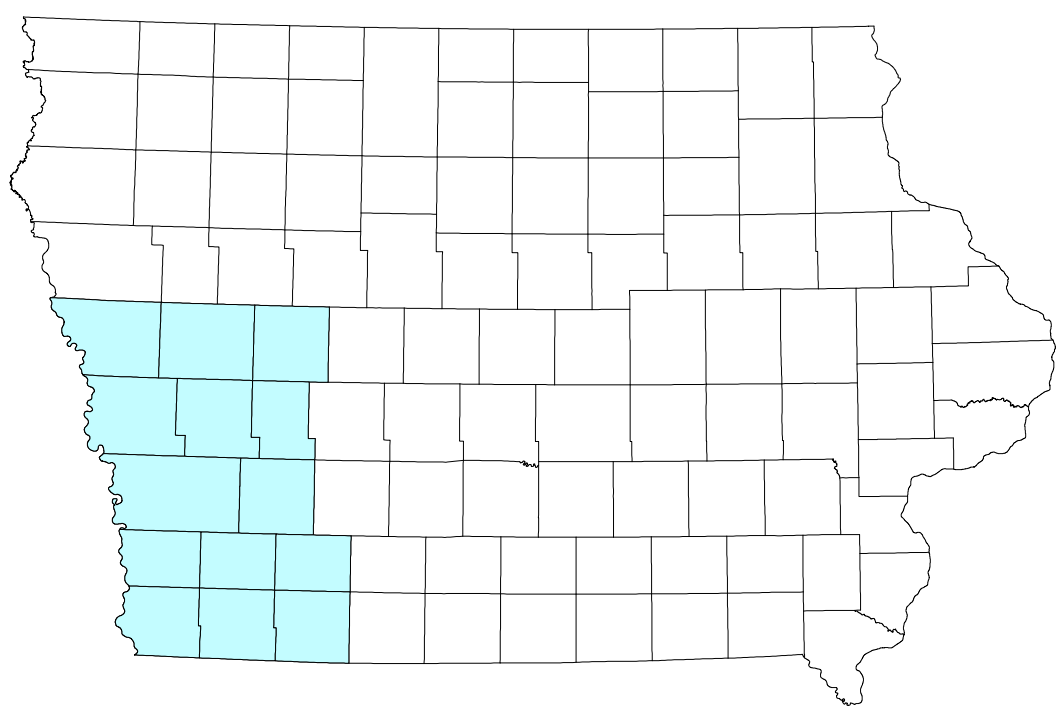
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Iowa Geological Survey
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Description of Map Symbols

- GEOLOGIC UNIT CONTACTS
- BEDROCK WELL DATA POINTS
- COUNTY OR TOWN BOUNDARY
- MAJOR HIGHWAYS
 - Interstate Route
 - U.S. Route
 - State Route
- TOWNSHIP BOUNDARY
- LAKE, RIVER, OR STREAM
- FAULT ZONE (dashed where inferred)
 - u - identifies up-thrown block
 - d - identifies down-thrown block



Index Showing Area of Geologic Map

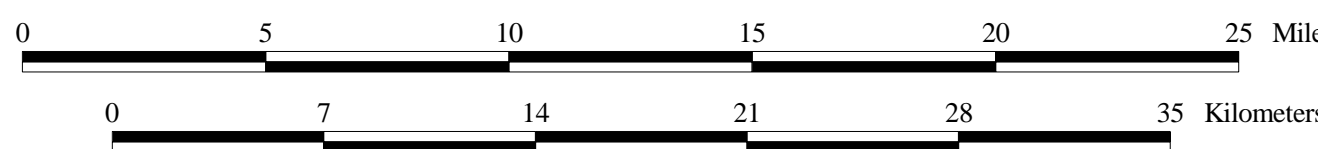
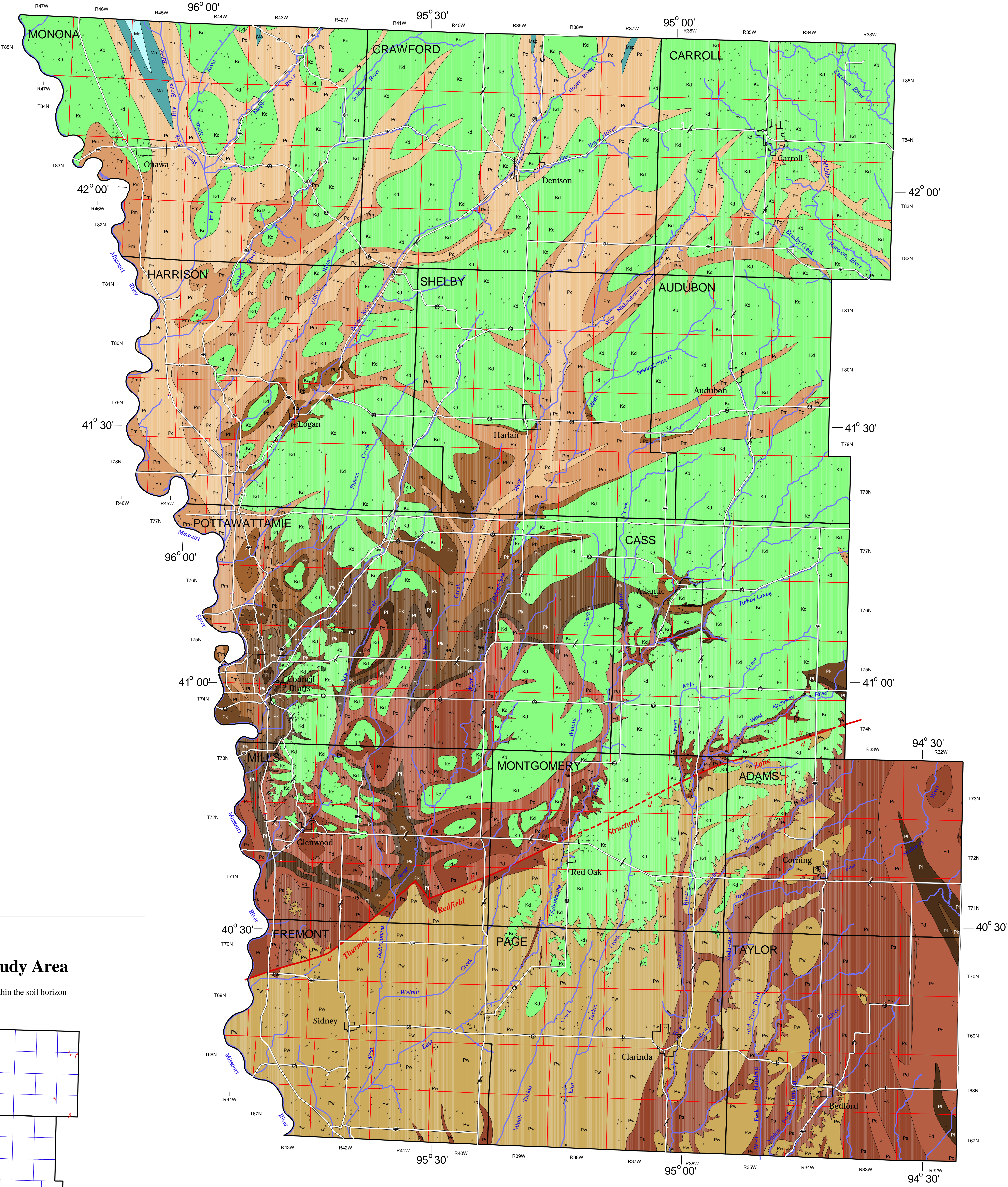
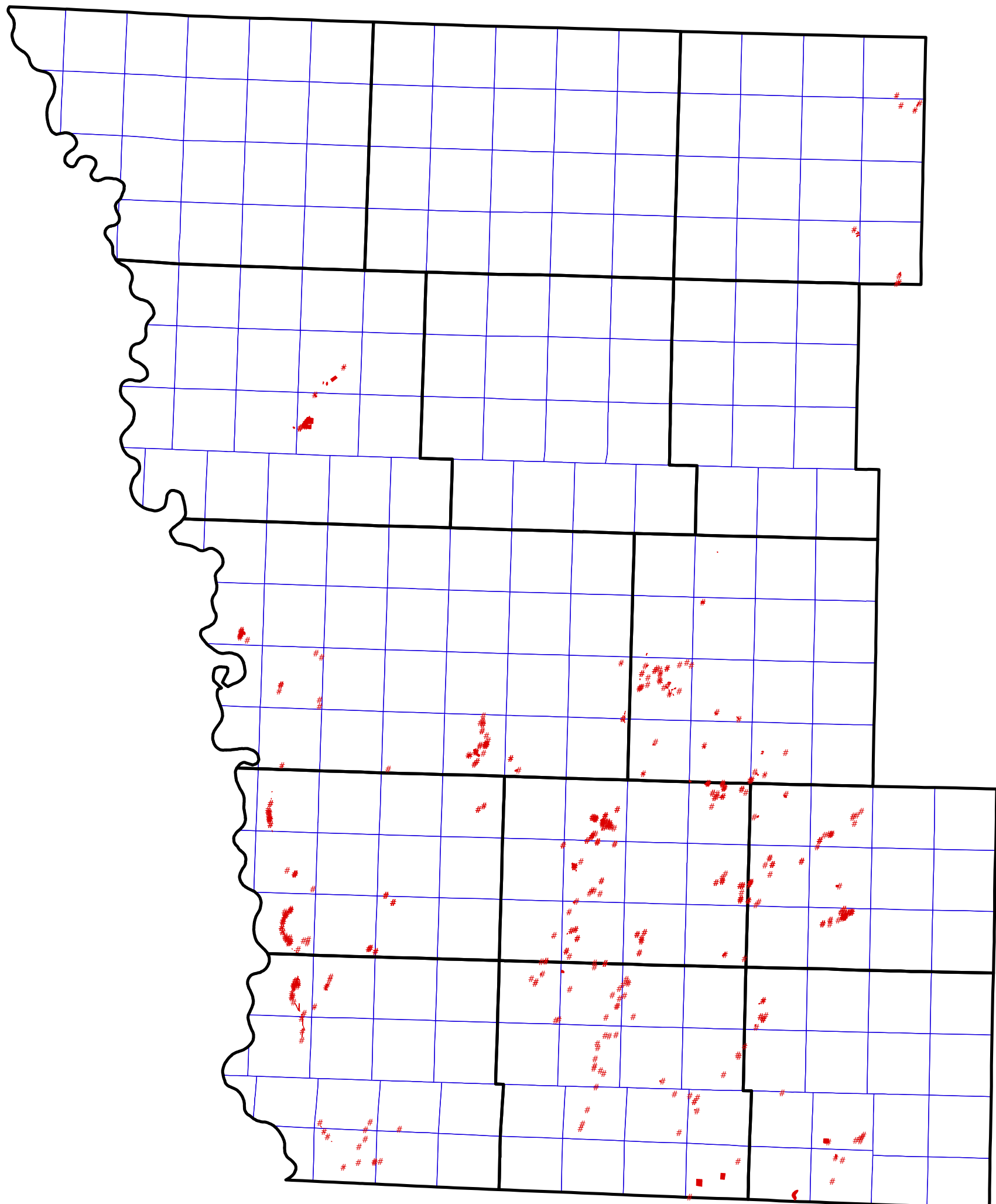
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Rock Exposures in the Study Area

Areas of bedrock exposure or bedrock surface within the soil horizon



scale: 1:250,000
(when printed at 36" x 42" format)

LEGEND

Description of Rock Units

CRETACEOUS

Dakota Formation (mid Cretaceous (upper Albian)). Maximum thicknesses of 100 to 200 ft (30-60 m). Primary lithologies: sandstone, very fine- to coarse-grained, part poorly to conglomeratic, part cemented by iron oxide. Secondary lithologies: gravel and conglomeratic mudstone, gray to variegated, part with siderite pellets.

PENNSYLVANIAN

Webster Group (Upper Pennsylvanian (upper Virgilian)). Maximum thickness 320 ft (98 m) in Fremont County. Primary lithologies: shale, gray mudstone, gray, part laminated silt to sandy. Secondary: limestone, fossiliferous, part coarsely grained mudstone, part red, part calcareous/sandstone, siltstone to very fine sandstone. Minor: black shale, coal.

Shawnee Group (Upper Pennsylvanian (middle Virgilian)). Thickness 100 to 220 ft (30-67 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary: mudstone, part calcareous/mudstone, part silt-laminated, limestone, coarsely grained. Minor: chert, coal, black shale, phosphatic, very fine sandstone.

Doughs Group (Upper Pennsylvanian (lower Virgilian-uppermost Missourian)). Thickness 90 to 155 ft (27-47 m). Primary lithologies: shale and mudstone, gray, part silt-laminated. Secondary: limestone, fossiliferous, part coarsely grained, siltstone to very fine sandstone; mudstone, part red, part calcareous/sandstone. Minor: coal, black shale.

Lansing Group (Upper Pennsylvanian (upper Missourian)). Thickness 45 to 78 ft (14-24 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary: limestone, coarsely grained, mudstone to siltstone. Minor: black shale, phosphatic.

Kansas City Group (Upper Pennsylvanian (middle Missourian)). Thickness 100 to 140 ft (30-43 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary: limestone, coarsely grained, mudstone. Minor: chert, coal, black shale, phosphatic.

Bronson Group (Pennsylvanian (lower Missourian-uppermost Desmoinesian)). Thickness 100 to 150 ft (30-46 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary: limestone, coarsely grained, black shale, phosphatic, mudstone to siltstone, gray. Minor: chert, coal, sandstone.

Marathon Group (Middle Pennsylvanian (upper Desmoinesian)). Thickness 125 to 170 ft (38-52 m). Primary lithologies: shale, gray; limestone, fossiliferous. Secondary: mudstone, gray, green gray, red; sandstone, very fine- to medium-grained. Minor: coal, siltstone, pyrite.

MISSISSIPPIAN

"St. Louis" and Pella Formations (Middle Mississippian (Meramecian)). Thickness generally 40 to 80 ft (12-24 m), locally truncated beneath Pz. Primary lithologies: dolomite, part sandy limestone, part fossiliferous to sandy. Secondary: shale, green-gray, calcareous; siltstone; limestone; breccia; sandstone. Minor: chert, chalcidolite.

Augusta Group (Middle Mississippian (Osagean)). Thickness 135 to 240 ft (41-73 m). Primary lithologies: dolomite, dolomitic limestone. Secondary: limestone, fossiliferous; shale, gray; glauconitic dolomitic chert. Minor: chalcidolite; quartz geodes.

Gibbs City Formation (Mississippian (lower Osagean-uppermost Kinderhookian)). Thickness 20 to 90 ft (6-27 m). Primary lithologies: limestone, fossiliferous; limestone, coarsely grained. Secondary: dolomite.